OWNER'S INFORMATION MANUAL FOR HEAT PUMPS

IMPORTANT! BEFORE YOU TURN YOUR HEAT PUMP ON!

1. Be sure the electrical power has been turned on at the outdoor unit for at least 8 hours. In cold weather 12 hours is better. This is to prevent damage to your compressor.
2. Be sure all supply and return grilles are open and not obstructed.
3. Check to see that your indoor unit has clean air filters installed to prevent clogging the fins on the coil.

HOW YOUR HEAT PUMP WORKS

COOLING

During the cooling season, your Heat Pump works like any other summer air conditioner. It uses an indoor coil, a compressor and an outdoor coil to move heat from inside to outside. Fans move air across the coils and circulate air in the conditioned space. A thermostat turns the fans and compressor on and off as cooling is needed. Hotter weather means more cooling is required, so your unit will run longer. When the temperature is highest, the unit may run continuously for several hours.

HEATING

In the heating season, the use of the coils is reversed. The outdoor coil picks up heat from the air and the indoor coil releases this heat to warm your home. Colder weather increases heat needed and the unit runs longer. In most areas the temperature will sometimes drop low enough that the Heat Pump will run continuously. This outdoor temperature at which the heat needed is equal to your Heat Pump's capacity is known as the system "Balance Point". This temperature will vary with each installation, depending on the heat loss of the home and the size of the heat pump selected. Below the Balance Point, the Heat Pump will run continuously and the auxiliary electric resistance heat will be cycled on and off by the thermostat, as needed. Your Heat Pump will continue to operate efficiently at outdoor temperatures below 0°F.

Heat Pumps operate with much lower air temperatures than gas furnaces and other types of heating equipment. The air coming from supply grilles and registers will be only 15° to 30° warmer than the air in your home. It will feel cool if it blows directly on you, but will provide the heat needed to keep your home warm and comfortable.

DEFROST CYCLE

When the outdoor temperature drops below 45°, frost may start to form on the outdoor coil. Frost buildup will be heaviest on damp days with the temperature at 35° to 40°. The Heat Pump has an automatic control which will reverse the system and stop the outdoor fan to defrost the coil when needed. Some units operate on a timer at 45 to 90 minute intervals. Others have an electronic control which senses coil and air temperatures to determine when a defrost cycle is needed. They may go as long as 6 hours between defrosts. The coil may be almost completely covered with frost at some times. Don't worry unless it continues to build up a thicker layer with areas of hard clear ice. If excessive ice buildup should occur, call your serviceman.

When the Heat Pump is defrosting, a cloud of steam may rise from the outdoor unit for a short time. This is normal and harmless.

The water which runs from the defrosting coil must be drained away from the unit. Snow drifts must be kept cleared away to prevent ice buildup in the coil from defrost water.

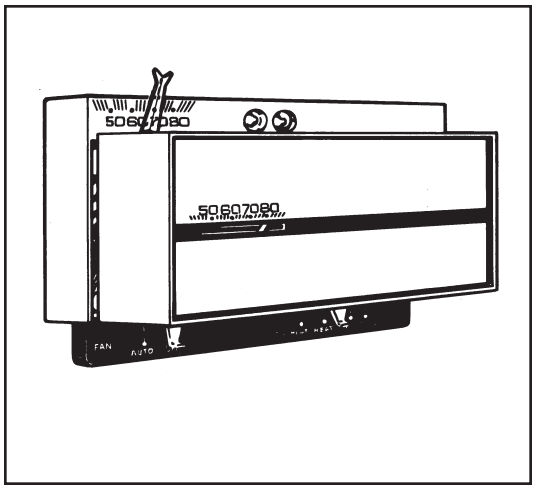
Important things to remember about the Defrost Cycle.

1. Water must drain away from the coil and unit to prevent damage from ice buildup. Keep snow cleared away.
2. The outdoor fan stops. The unit may make some strange hissing or gurgling noises and a cloud of steam. They are normal.
3. Call your serviceman if you notice excessive frost and clear ice buildup.

92-20802-03-09
SUPERSEDES 92-20802-03-08

HOW TO OPERATE YOUR HEAT PUMP

The control center for your Heat Pump is your thermostat. Many different types are used, but they are similar to operate.



Your thermostat will have switches to select some or all of the following functions.

COOL - Turns cooling on when temperature rises above set point.

HEAT - Turns Heat Pump heating on when temperature drops below set point. If room temperature drops another 2°, turns on the auxiliary resistance heat. Heat pump continues to run.

AUTO - Turns on cooling or heating as required to maintain set points. Most thermostats have at least 4° separation between heating and cooling settings.

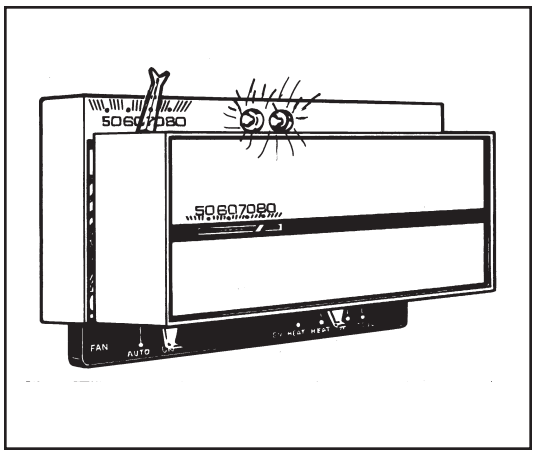
OFF - Turns heating and cooling modes off (Fan may still run in FAN-ON).

FAN-ON - Turns fan on for continuous operation.

FAN-AUTO - Fan cycles on and off with cooling or heating operation.

EMERGENCY HEAT - Turns Heat Pump compressor and outdoor fan off and provides heat from electric strips only. Use this switch to manually turn the Heat Pump off and change to the auxiliary heat in case of Heat Pump problems.

A lever is used to set the temperature that you desire. Some thermostats have two levers, one for heating and one for cooling.



Lights may be used to indicate that the auxiliary electric heat is operating. The lights may be different colors on different types of thermostats. Typical lights will be blue or green for normal auxiliary heating and red for emergency heat.

For the most economical operation of your system, select the highest summer setting and the lowest winter setting at which you are comfortable. Typical temperatures are 78° on cooling and 70° on heating. Your operating cost is increased from 3% to 8% for each degree lower setting in cooling and for each degree higher setting in heating. When heating, let the Heat Pump do the work whenever possible. Do not change temperature settings more than necessary. If you turn the temperature setting up 2° or more you will bring on the auxiliary resistance heat. This costs more to operate than the Heat Pump.

NIGHT SETBACK THERMOSTATS

Night Setback thermostats are available to automatically turn the temperature down at night and back up in the morning. **Only** Setback thermostats with gradual, incremental or “Intelligent” recovery should be used with Heat Pumps. Setback thermostats without gradual recovery will use the electric strip heaters to warm the air in the morning, and may use more electricity than was saved during the night. Ask your contractor for advice before installing a Setback or “Energy Saving” thermostat.

HEAT PUMP MONITOR

A control called a Heat Pump Monitor may be installed with your system. If so, it will check the performance of your Heat Pump and turn it off if a problem occurs. It will switch to the auxiliary heat and turn on the Emergency Heat Light on your thermostat to tell you that the system requires attention.

OPERATING ECONOMICALLY

Here are other ways to save electricity and improve your system’s performance.

1. Keep all grilles and registers open and clear of obstructions such as drapes or furniture.
2. Keep doors and windows closed.
3. Be sure all air ducts are well insulated and sealed with a vapor barrier.
4. Let the sun in during the winter. Keep it out during the summer.
5. Be sure clothes dryers are vented to the outside. (Away from your outdoor unit.)
6. Fireplaces are pleasant, but most fireplaces bring in more cold outside air for combustion and flue draft than they heat. Your Heat Pump may actually run more!
7. Use kitchen and bathroom exhaust fans only when necessary.
8. Add insulation, storm windows and insulated outside doors. Seal cracks to prevent air leakage.
9. Keep your filters clean. Reduced air flow in your unit reduces efficiency.
10. Operate your indoor fan on AUTO. It costs less and will provide better humidity control in the summer.
11. Keep lamps, TV’s and other heat sources away from your thermostat.
12. Leave the power on at the outdoor unit at all times. If

you have a power failure, leave your Heat Pump off until power has been back on as long as it was off, up to 8 hours. Switch to Emergency Heat if needed while Heat Pump is off.

13. Protect the outdoor unit from roof runoff to prevent excess ice buildup.

MAINTENANCE FOR YOUR HEAT PUMP

DANGER: SHUT OFF ELECTRICAL POWER BEFORE PERFORMING ANY MAINTENANCE TO PREVENT SERIOUS INJURY FROM SHOCK.

FILTERS

Keep your air filters clean. You may have any one of these types:

1. Glass Fiber (Throwaway) - Replace these when dirty. Do not clean.
2. Plastic Fiber or Foam-Vacuum clean and reinstall these.
3. Aluminum Mesh - Wash with detergent and water. Always recoat these per the manufacturer's instructions. They will not filter out dust and dirt without the adhesive coating.

Filters should be checked at least once a month and cleaned or replaced when needed. Replace throwaway filters at least twice a year.

LUBRICATION

The compressor requires no oiling or other maintenance. The fan motors have prelubricated sleeve bearings and may not require attention for an indefinite period of time. However, our recommendations are as follows.

1. Motors without oiling ports -
   Prelubricated and sealed. No further lubrication should be required, but in case of bearing problems, the blower and the motor end bells can be disassembled and the bearings relubricated by a qualified service person.
2. Motors with oiling ports -
   Add from 10 to 20 drops of Electric Motor Oil or an SE grade of non-detergent SAE-10 or 20 motor oil to each bearing every two years for somewhat continuous duty, or at least every five years for light duty. Take care not to over oil, because excessive lubrication can damage the motor.

In any event, clean the indoor air blower motor periodically to prevent the possibility of overheating due to an accumulation of dust and dirt on the windings or on the motor exterior. And, as suggested elsewhere in the instructions, the air filters should be kept clean because dirty filters can restrict airflow. The indoor air blower motor depends upon sufficient air flowing across and through it to keep from overheating.

CLEANLINESS

Keep the outdoor coil clean and free of restrictions. Free air flow is essential. Keep fences, shrubs, snow drifts or other obstructions at least two feet from all coil air inlets.

Keep the coil free of grass clippings, weeds, leaves, etc. **TURN ELECTRICITY OFF BEFORE CLEANING!**

Cleaning and waxing the cabinet of the outdoor unit with automotive polish will improve its appearance and extend the life of the finish.

Never use a weather cover over the outdoor unit, even if it is turned off for long periods of time. A cover will hold moisture in the unit and cause more rust buildup and damage to electrical parts than exposure to weather.

Never use your Heat Pump as a stand for garden hoses or tools. Do not permit children to play near its moving parts or electrical components. Use caution with lawn mower and trimmer to avoid damaging refrigerant piping or electrical wiring.

Keep your filters clean!

PROTECTING EQUIPMENT FROM THE ENVIRONMENT

The metal parts of this unit may be subject to rust or deterioration in adverse environmental conditions. This oxidation could shorten the equipment's useful life. Salt spray, fog or mist in seacoast areas, sulfur or chlorine from lawn watering systems, and various chemical contaminants from industries such as paper mills and petroleum refineries are especially corrosive.

WARNING: DISCONNECT ALL POWER TO UNIT BEFORE STARTING MAINTENANCE!

1. Avoid having lawn sprinkler heads spray directly on the unit cabinet.
2. Frequent washing of the cabinet, fan blade and coil with fresh water will remove most of the salt or other contaminants that build up on the unit.
3. Regular cleaning and waxing of the cabinet with a good automobile polish will provide some protection.
4. A good liquid cleaner may be used several times a year to remove matter that will not wash off with water.

Several different types of protective coatings are offered in some areas. These coatings may provide some benefit, but the effectiveness of such coating materials cannot be verified by the equipment manufacturer.

The best protection is frequent cleaning, maintenance and minimal exposure to contaminants.

IN CASE OF HEAT PUMP PROBLEMS

1. Check to see that electrical power is on. Check breakers or fuses for both indoor and outdoor units.
2. Check to see that air flow is not restricted. Indoors, check grilles, registers and filter. Outdoors, check coil and see that the fan is running. (Remember it stops for a short time during defrost cycles).
3. Check to be sure your thermostat is set properly. System switch should be on HEAT, COOL or AUTO as appropriate. Temperature set point must be above room temperature on heating or below room temperature on cooling for system to start.

CALL YOUR SERVICEMAN IF:

1. You observe excess ice buildup.
2. You hear new, unusual noises.
3. The Heat Pump is short-cycling (turning on and off rapidly) and not heating or cooling properly.
4. Annually for a routine check.

Periodic inspections by your professional serviceman will help to keep your Heat Pump operating at peak efficiency and reduce the chance of major repairs.